CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/KRIDL/W.No.01/CSR.3/794j/CEMENT/2014-15 Date: 23.03.2015

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
*AGENCY	:	**Technical Manager,** KRIDL, Bangalore.
*NAME OF THE WORK	:	Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	:	AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	20.03.2015
PERIOD OF TESTING	:	20.03.2015 to 23.03.2015

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	27.50 %	-
1	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	135 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	490 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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VISHWANATH. I.A.
Chief Executive Officer

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com

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Job No: CTCE/BBMP/KRIDL/W.No.01/CSR.3/794j/SAND-Gradation/2014-15 : 23.03.2015

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager,** KRIDL, Bangalore.
* Name of Work	: Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	: AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Technical Reference	: IS : 2386 Part 1 - 1963 RA-2007
Sample ID	: Fine Aggregates
Sample Received on	: 20.03.2015
Date of Testing	: 23.03.2015

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	93.44	90-100	90-100	90-100	95-100
2.36	81.60	60-95	75-100	85-100	95-100
1.18	61.37	30-70	55-90	75-100	90-100
600 Micron	26.78	15-34	35-59	60-79	80-100
300 Micron	11.52	5-20	8-30	12-40	15-50
150 Micron	8.95	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Chief Executive Officer

AE1
AEE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.01/CSR.3/794j/AGG/GR/2014-15 : 23.03.2015

TEST REPORT ON COARSE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager,** KRIDL, Bangalore.
* Name of Work	: Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	: AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Technical Reference	: IS : 2386 Part 1 -1963 RA-2007
Sample ID	: Coarse Aggregates (40mm)
Sample Received on	: 20.03.2015
Date of Testing	: 23.03.2015

Total Wt. of Aggregates in gms= **10000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.35	95-100	85-100
20	49.60	30-70	0-20
10	31.00	10-35	0-5
4.75	2.50	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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VISHWANATH, I.A.
Chief Executive Offic

AE1
AE2

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
e-mail : jayanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No. CTCE/BBMP/KRIDL/W.No.01/CSR.3/794j/AGG/GR/2014-15 : 23.03.2015

TEST REPORT ON COARSE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager,** KRIDL, Bangalore.
* Name of Work	: Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	: AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Technical Reference	: IS : 2386 Part 1 -1963 RA-2007
Sample ID	: Coarse Aggregates (20mm)
Sample Received on	: 20.03.2015
Date of Testing	: 23.03.2015

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS :383-1970 (RA- 2007)	
		Graded	Single Sized
40	100	100	100
20	96.30	95-100	85-100
10	10.96	25-55	0-20
4.75	3.84	0-10	0-5

* Information is furnished by the Customer/Representative

Remarks : This sample is under Single Sized specific limits

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Chief Executive Officer

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#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com

Job No: CTCE/BBMP/KRIDL/W.No.01/STEEL/2014-15 23.03.2015

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager,** KRIDL, Bangalore.
Name of the work	:	Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	:	AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Date of Test	:	23.03.2015
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	8	0.40	510	552	13.15	O.K	O.K

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VISHWANATH. I.A.
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Job No.: CTCE/BBMP/KRIDL/W.No.01/STEEL/2014-15 23.03.2015

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager,** KRIDL, Bangalore.
Name of the work	:	Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	:	AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Date of Test	:	23.03.2015
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	12	0.89	515	558	13.65	O.K	O.K

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Chief Executive Officer

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Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

Ref No: CTCE/BBMP/KRIDL/W.No.01/STEEL/2014-15 23.03.2015

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager,** KRIDL, Bangalore.
Name of the work	:	Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	:	AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Date of Test	:	23.03.2015
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	16	1.58	520	563	13.90	O.K	O.K

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Job No: CTCE/BBMP/KRIDL/W.No.01/CSR.3/794j/CC Solid Block/2014-15 : 25.03.2015

TEST REPORT ON SOLID CONCRETE BLOCKS

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager,** KRIDL, Bangalore.
* Name of the Work	: Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	: AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.03.2015
Sample Received on	: 20.03.2015
Date of Testing	: 25.03.2015
Size of Blocks	: 400mm x 200mm x 200mm
Cross Sectional Area	: 80000 mm^2
Technical Reference	: IS: 2185 (Part 1) - 2005
No. of Blocks Tested	: 08

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	25.62	261.7	3.27	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	24.83	258.9	3.24	
3	Block 3	26.59	262.7	3.28	
4	Block 4	25.63	260.5	3.26	
5	Block 5	26.32	264.5	3.31	
6	Block 6	25.94	261.7	3.27	
7	Block 7	24.58	262.3	3.28	
8	Block 8	25.48	260.8	3.26	

*Information is furnished by the Customer/Representative.

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VISHWANATH. I.A.
Chief Executive Officer

AE1 Com AEX

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.01/SDBC/Bit/2014-15 22.07.2015

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX AS PER IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.07.2015
SAMPLE I/D	Roads in Vikasa Layout Ward No.01
DATE OF TESTING	22.07.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25	25.50
7. Bitumen content in %	5.00	5.10
8. Average	5.05	

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Chief Executive Officer

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

Lab No: CTCE/BBMP/KRIDL/W.No.01/WMM/Gradation/2014-15

19.07.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 15.07.2015

Date of Testing : 19.07.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	1015	1015	4.1	95.9	95-100
22.4	6350	7365	29.5	70.5	60-80
11.2	4675	12040	48.2	51.8	40-60
4.75	4560	16600	66.4	33.6	25-40
2.36	3595	20195	80.8	19.2	15-30
0.600	2110	22305	89.2	10.8	8-22
0.075	2230	24535	98.1	1.9	0-8

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Ref No: CTCE/BBMP/KRIDL/W.No.01/SDBC/Bit/2014-15 22.07.2015

GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX AS PER IS2386 & IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Roads and Construction at Vikasa Layout in Ward No.01 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-1/2014-15/314 Dated: 20.07.2015
SAMPLE I/D	Roads in Vikasa Layout Ward No.01
DATE OF TESTING	22.07.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	36.25	7.63	7.63	92.37	90-100
4.75	258.4	54.40	62.03	37.97	35-51
2.36	54.23	11.42	73.45	26.55	24-39
1.18	46.58	9.81	83.25	16.75	15-30
0.3	25.64	5.40	88.65	11.35	9-19
0.075	32.58	6.86	95.51	4.49	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	36.59	7.71	7.71	92.29	90-100
4.75	249.6	52.60	60.31	39.69	35-51
2.36	56.87	11.99	72.30	27.70	24-39
1.18	41.52	8.75	81.05	18.95	15-30
0.3	33.45	7.05	88.10	11.90	9-19
0.075	33.26	7.01	95.11	4.89	3-8

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